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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,767

07/20/2005

Kiyotaka Moriizumi

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EXAMINER

BEHNCKE, CHRISTINE M

ART UNIT

PAPER NUMBER

3661

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DELIVERY MODE

12/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/542,767	Applicant(s) MORIIZUMI ET AL.	
	Examiner CHRISTINE M. BEHNCKE	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11,12,14,17-19,21,22,24,27-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11,12,14,17-19,21,22,24,27-29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/11/2007, 12/18/2006, 6/22/2006, 3/02/2006, and</u> | 6) <input type="checkbox"/> Other: _____ |
| <u>7/20/2005</u> | |

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DETAILED ACTION

This office action is in response to the preliminary amendment filed December 27, 2007, in which claims 11, 12, 14, 17-19, 21, 22, 24, 27-29, and 31 were presented for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11, 14, 21, 24 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson, US 6,909,639, in view of Gustafson, US 6,014,601.

(Claims 11 and 21) Lemelson describes a vehicle and method for controlling a vehicle that includes a plurality of different occupant protection devices (figure 1), comprising: a subject target detector portion that detects a plurality of subject targets which exist in a course of the vehicle and which have a possibility of colliding with the vehicle (column 5, lines 42-62 and column 8, lines 42-50); a relative quantity detector portion that detects a relative quantity between the vehicle and each of the subject targets detected by the subject target detector portion (column 7, lines 31-49, column 11, lines 35-39); a collision time calculator portion that predicts and calculates a collision time of each of the subject targets until a collision with the vehicle, by using the relative quantity between the vehicle and each of the subject targets detected by the relative quantity detector portion (column 12, line 61-column 13, line 11); a collision subject target selector portion that selects a collision subject target having a high possibility of colliding with the vehicle based on at least the collision time of each of the subject targets calculated by the collision time calculator portion (column 12, line 61-column 13, line 11, column 13, lines 25-36); an occupant protection device selector portion that selects an occupant protection device to be actuated among the plurality of occupant protection devices, based on the hazard vector of the collision subject target selected by collision subject target selector portion (figure 15, column 14, lines 45-67), using a state

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flag setting map that stores in advance state flags that indicate actuation of the occupant protection devices in correspondence with the hazard vector of the collision subject target (column 14, lines 5-15), and for setting the state flag for the selected occupant protection device (column 14, line 65-column 15, line 6); and a control portion that controls actuation of the selected occupant protection device, based on the set state flag ("Generate Output Expert Control Signals" figure 15). Lemelson describes wherein the output control signal for the plurality of protection devices is determined by the hazard vector (figure 11), the data of the hazard vector is also used to determine collision time. Lemelson does not describe wherein the selection of the protection device is based on the collision time. However, Gustafson teaches calculating a collision time and depending on that calculated collision time, activating one level or type of alarm (column 5, lines 15-30) and further that the collision time is based on variables relative speed, distance and relative acceleration (column 2, lines 10-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to determine the protection device action based on collision time, as collision time is merely an alternative means of expressing the data of Lemelson's hazard vector.

(Claim 31) Lemelson describes a vehicle that includes a plurality of different occupant protection devices, comprising: subject target detection means for detecting a plurality of subject targets that exist in a course of the vehicle and that have a possibility of colliding with the vehicle (column 5, lines 42-62 and column 8, lines 42-50); relative quantity detection means for detecting a relative quantity between the vehicle and each of the subject targets detected by the subject target detection means (column 7, lines

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31-49, column 11, lines 35-39); collision time calculation means for predicting and calculating a collision time of each of the subject targets until a collision with the vehicle, by using the relative quantity between the vehicle and each of the subject targets detected by the relative quantity detection means (column 12, line 61-column 13, line 11); collision subject target selection means for selecting a collision subject target having a high possibility of colliding with the vehicle based on at least the collision time of each of the subject targets calculated by the collision time calculation means (column 12, line 61-column 13, line 11, column 13, lines 25-36); occupant protection device selection means for selecting an occupant protection device to be actuated among the plurality of occupant protection devices, based on the hazard vector of the collision subject target selected by the collision subject target selection means (figure 15, column 14, lines 45-67), using a state flag setting map that stores in advance state flags that indicate actuation of the occupant protection devices in correspondence with the hazard vector of the collision subject target (column 14, lines 5-15), and for setting the state flag for the selected occupant protection device (column 14, line 65-column 15, line 6); and control means for controlling actuation of the selected occupant protection device, based on the set state flag (Generate Output Expert Control Signals" figure 15).

Lemelson describes wherein the output control signal for the plurality of protection devices is determined by the hazard vector (figure 11), the data of the hazard vector is also used to determine collision time. Lemelson does not describe wherein the selection of the protection device is based on the collision time. However, Gustafson teaches calculating a collision time and depending on that calculated collision time, activating

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one level or type of alarm (column 5, lines 15-30) and further that the collision time is based on variables relative speed, distance and relative acceleration (column 2, lines 10-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to determine the protection device action based on collision time, as collision time is merely an alternative means of expressing the data of Lemelson's hazard vector.

(Claims 14 and 24) Lemelson further describes wherein the collision subject target is selected based on the collision time (column 13, lines 25-36), and information that indicates whether the detecting the subject targets is continued (column 2, lines 54-57).

Claim Rejections - 35 USC § 103

Claims 12 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson in view of Gustafson as applied to claims 11 and 21 above, and further in view of Bell, US 6,069,581.

Lemelson describes detecting plural targets and selecting a target that is ranked as the highest hazard. Lemelson suggests to one of ordinary skill that the time to collision is used to select the most hazard target, but does not explicitly describe so. However, Bell teaches a radar system that detects multiple targets, selects a subject target that has a shortest collision time among the plurality of subject targets calculated by the system (column 8, lines 35-39 and column 5, lines 27-34). It would be obvious to one of ordinary skill in the art that the subject target should be selected as the target that would be first hit by the vehicle, as Bell suggests if the car stops for the closer target, then the car will avoid hitting the further targets (column 5, lines 27-34).

Claim Rejections - 35 USC § 103

Claims 17-19 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson in view of Gustafson as applied to claims 11 and 21 above, and further in view of Takafuji, US 6,859,731.

(Claims 17, 19, 27 and 29) Neither Lemelson nor Gustafson describe correcting the collision time by the predetermined relative quantity. However, Takafuji teaches a collision system including determining a collision time between the vehicle and an object (abstract), a collision time corrector portion that corrects the collision time predicted and calculated by the collision time calculator using a predetermined relative quantity among the relative quantities detected by the relative quantity detector portion (figures 2 and 3, column 7, lines 6-11). Takafuji further teaches wherein the predetermined relative quantity used by the collision time corrector is a quantity of offset of the subject target from a center line of the vehicle which extends in a direction that coincides with a traveling direction of the vehicle (figure 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the system of Lemelson in view of Gustafson with the teachings of Takafuji because as Takafuji suggests, determining the collision probability of the determined path of the vehicle allows for more accurate determination of future collisions and determine a more accurate total collision probability (column 3, lines 54-63).

(Claims 18 and 28) Lemelson describes correcting a collision time that is determined not to be the primary hazard, by setting the collision time to a predetermined maximum value if it is determined the target collision time is greater than a value. But

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does not describe wherein the correction is based on a predetermined relative quantity that is compared to a pre-set value (column 13, lines 25-36). However, Takafuji further teaches correcting a collision time if the detected predetermined relative quantity used is greater than a pre-set value (column 7, lines 6-11 and column 13, lines 5-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Lemelson in view of Gustafson with the teachings of Takafuji because as Lemelson suggests once a primary hazard has been identified is to downgrade other detected hazards to obstacles to ensure the primary hazard retains priority.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE M. BEHNCKE whose telephone number is (571)272-8103. The examiner can normally be reached on 8:30 am- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. M. B./
Examiner, Art Unit 3661

/Thomas G. Black/

Supervisory Patent Examiner, Art Unit 3661